



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/637,087 Confirmation No. 9091
Applicant : Man Mohan Rai and Nateri K. Madavan
Filed : 31 July 2003
TC/A.U. : 2129
Examiner : Joseph P. Hirl
Docket No. : ARC-14281-3
Customer No. : 25186

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT
BEFORE MAILING DATE OF EITHER A FINAL ACTION OR NOTICE OF
ALLOWANCE [37 C.F.R. 1.97(c)]**

**TIME OF TRANSMITTAL OF ACCOMPANYING
INFORMATION DISCLOSURE STATEMENT**

1. The information disclosure statement transmitted herewith is being filed after three months of the filing date of this national application or the date of entry of the national stage as set forth in § 1.491 in an international application or after the mailing date of the first Office action on the merits, whichever event occurred last but before the mailing date of either:

- (1) a final action under § 1.113 or
(2) a notice of allowance under § 1.311,

whichever occurs first.

FEE PAYMENT

3. Applicant elects the option to pay the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement under § 1.97(c) (\$180.00).

Fee due \$180.00

06/30/2006 FHETEKI1 00000033 140116 10637087

01 FC:1806 180.00 DA

METHOD OF PAYMENT OF FEE

4. ☐ Attached is a check in the amount of \$____.
- ☒ Charge Deposit Account No. 14-0116 in the amount of \$180.00.
A duplicate of this request is attached.

If any additional fees are due, please charge Deposit Account No. 14-0116.

Reg. No.: 26,994

Tel. No.: (650) 604-0887

John F. Schipper 22 June 2006
John F. Schipper date
Patent Attorney
NASA Ames Research Center
Mail Stop 202A-4
Moffett Field, CA 94035-1000

INFORMATION DISCLOSURE CITATION

Form PTO-1449 (Modified)

(Use several sheets if necessary)

ATTY. DOCKET NO.

ARC-14281-3

SERIAL NO.

10/637,087

APPLICANT

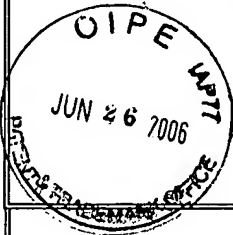
Man M. Rai and Nateri K. Madavan

FILING DATE

31 July 2003

GROUP

2129

**U.S. PATENT DOCUMENTS**

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation	
						Yes	No

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	Drela, M., "Elements of Airfoil Design Methodology," in <i>Applied Computational Aerodynamics Progress in Astronautics and Aeronautics</i> , Vol. 125, pp. 167-189, 1990. P. A. Henne, Ed.
	Volpe, G., "Inverse Airfoil Design: A Classical Approach Updated for Transonic Applications," in <i>Applied Computational Aerodynamics, Progress in Astronautics and Aeronautics</i> , Vol. 125, pp. 191-220, 1990. P. A. Henne, Ed.
	Jameson, A., "Optimum Aerodynamic Design Using CFD and Control Theory," AIAA Paper, No. 95-1729-CP, 1995.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

Form PTO-1449 (Modified)

(Use several sheets if necessary)

ATTY. DOCKET NO.

ARC-14281-3

SERIAL NO.

10/637,087

APPLICANT

Man M. Rai and Nateri K. Madavan

FILING DATE

31 July 2003

GROUP

2129

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

Narducci, R., Grossman, B., and Haftka, R. T., "Sensitivity Algorithms for an Inverse Design Problem Involving a Shock Wave," *Inverse Problems in Engineering*, Vol. 2, pp. 49-83, 1995.

Myers, R. H., and Montgomery, D. C., *Response Surface Methodology—Process and Product Optimization Using Designed Experiments*, John Wiley and Sons, New York, 1995.

Fan, X., Herbert, T., and Haritonidis, J. H., "Transition Control with Neural Networks," AIAA Paper No. 95-0674, AIAA 33rd Aerospace Sciences Meeting, Reno, Nevada, January 9-12, 1995.

Kawthar-Ali, M. H., and Acharya, M., "Artificial Neural Networks for Suppression of the Dynamic Stall Vortex Over Pitching Airfoils," AIAA Paper No. 96-0540, AIAA Aerospace Sciences Meeting Reno, Nevada, January 15-18, 1996.

Faller, W. E., and Schreck, S. J., "Unsteady Fluid Mechanics Applications of Neural Networks," AIAA Paper No. 95-0529, AIAA 33rd Aerospace Sciences Meeting, Reno, Nevada, January 9-12, 1995.

Norgaard, M., Jorgensen, C. C., and Ross, J. C., "Neural Network Prediction of New Aircraft Design Coefficients," NASA TM 112197, May 1997.

Meade, A. J., "An Application of Artificial Neural Networks to Experimental Data Approximation," AIAA Paper No. 93-0408, AIAA 31st Aerospace Sciences Meeting, Reno, Nevada, January 11-14, 1993.

Greenman, R., and Roth, K., "High-Lift Optimization Design Using Neural Networks on a Multi-Element Airfoil, ASME Paper DETC98/CEE-6006, 18th ASME, Computers in Engineering Conference, Atlanta, GA, September 13-16, 1998.

Hajela, P., and Berke, L., "Neural Networks in Structural Analysis and Design: An Overview," AIAA Paper No. 92-4805-CP, 4th AIAA/USAF/NASA/OAI Symposium on Multidisciplinary Analysis and Optimization, Cleveland, Ohio, September 21-23, 1992.

Huang, S. Y., Miller, L. S., and Steek, J. E., "An Exploratory Application of Neural Networks to Airfoil Design," AIAA Paper No. 94-501, AIAA 32nd Aerospace Sciences Meeting, Reno, Nevada, January 10-13, 1994.


Sanz, J.M., "Development of a Neural Network Design System for Advanced Turbo-Engines," Fourth U.S. National Congress on Computational Mechanics, August 7-8, 1997, San Francisco, California.

Rai, M. M., and Madavan, N. K., "Application of Artificial Neural Networks to the Design of Turbomachinery Airfoils," AIAA Paper No. 98-1003, AIAA 36th Aerospace Sciences Meeting Reno, Nevada, January, 1998.

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION Form PTO-1449 (Modified) <i>(Use several sheets if necessary)</i>		ATTY. DOCKET NO. ARC-14281-3	SERIAL NO. 10/637,087
		APPLICANT Man M. Rai and Nateri K. Madavan	
		FILING DATE 31 July 2003	GROUP 2129
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)			
	Pierret, S., and Van den Braembussche, R. A., "Turbomachinery Blade Design Using a Navier-Stokes Solver and Artificial Neural Network," <i>Journal of Turbomachinery</i> , Vol. 121, pp. 326-332, 1999.		
	Barron, A. R., "Approximation and Estimation Bounds for Artificial Neural Networks," <i>Machine Learning</i> , VOL. 14, pp. 115-133, 1994.		
	Montgomery, D. C., <i>Design and Analysis of Experiments</i> , John Wiley and Sons, New York, 1997.		
	Dring, R. P., and Heiser, W. H., "Turbine Aerodynamics," in <i>Aerothermodynamics of Aircraft Engine Components</i> , Oates, G. C., Ed., pp. 219-271. AIAA, New York, 1985.		
	Dunn, M., Bennett, W., Delaney, R. A., and Rao, K. V., "Investigation of Unsteady Flow Through a Transonic Turbine Stage: Part 11-Data/Prediction Comparison for Time-Averaged and Phase-Resolved Pressure Data," AIAA Paper No. 90-2409, 26 th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Orlando, FL, July 16-18, 1990.		
	Rai, M. M., and Madavan, N. K., "Aerodynamic Design Using Neural Networks," AIAA Paper No. 98-4928, Seventh AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, MO, September 2-4, 1998.		
	Madavan, N. K., and Rai, M. M., "Neural Net-Based Redesign of a Gas Generator Turbine for Improved Unsteady Aerodynamic Performance," AIAA Paper No. 99-2522, 35 th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Los Angeles, CA, June 20-24, 1999.		
EXAMINER		DATE CONSIDERED	
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			